



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

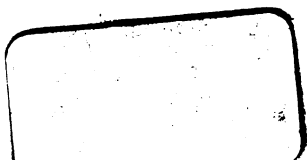
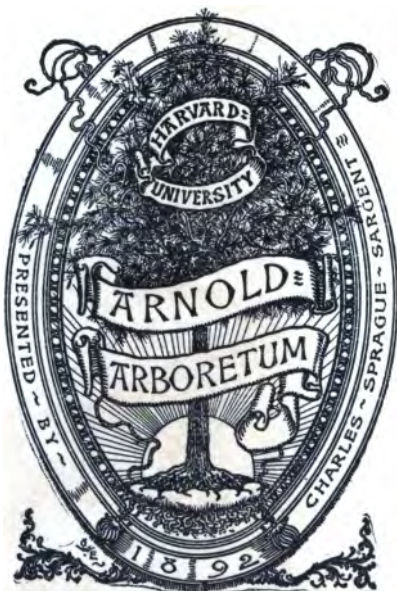
About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

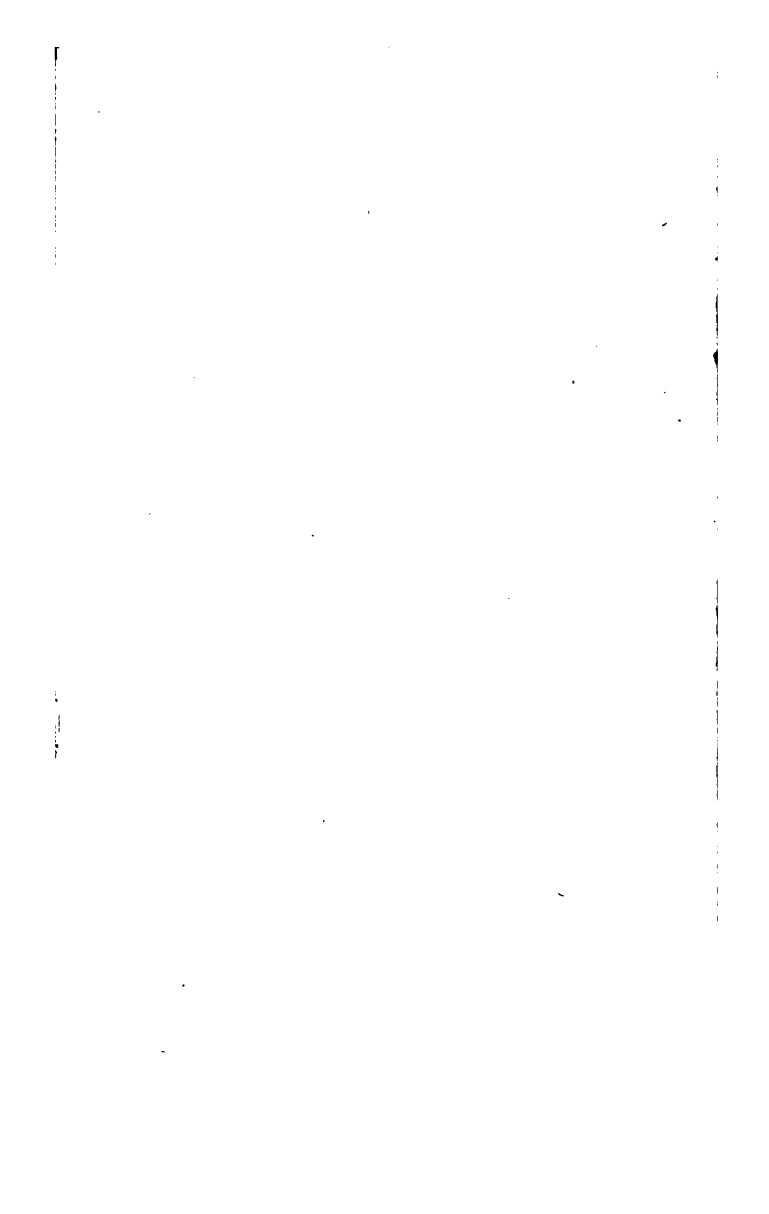
Q 48.

H 11.3

2







A
SHORT TREATISE
ON
FOREST-TREES,
AQUATICKS, EVER-GREENS,
FENCES and GRASS-SEEDS,

BY THE
RIGHT HONOURABLE

THE LATE

EARL OF HADDINGTON,

Thomas Hamilton.

EDINBURGH.

Printed for JAMES REID, Bookseller in LEITH.

M. DCC. LXXV.

Q40

H 11.3

2

DIRECTIONS

FOR

Raising of FOREST-TREES.

CHAP. I.

INTRODUCTION.

HAVING been a diligent planter for upwards of thirty years, and having had more trees of my own planting, than; I believe, any man ever planted in his lifetime, I have vanity enough to think my experience may be of use to my friends: and therefore I shall, in as plain and distinct a method as I can, tell the methods I have used; which, tho' they differ from almost all the treatises extant upon this subject, yet I dare answer there shall be nothing advanced in these papers, but what I can get attested to be matter of fact, and can shew the demonstration of upon my own grounds.

I have had great assistance from Mr. Evelyn, who wrote long ago upon this subject, and appears to be well skilled in it; yet he has been too credulous, and builds too much upon niceties, that are altogether trifling and unnecessary, which makes me differ from him in many particulars.

Moses Cook, gardener to my Lord Essex, hath published a very useful book upon the same subject, which has likewise its own blemishes. All that have written in English since their time, have copied from them, even

to the setting down of their errors; and not only so, but have added many more of their own. Some have written like philosophers, entertaining the fancy with airy, abstracted speculations, instead of conveying practical instructions to the inquisitive reader; whilst others, like quacks, promise a great deal, but perform nothing.

I shall not take up time in treating of the different soils proper for planting; but shall only tell in short, that I never met with any soil, that some one or other would not grow on. And as I go along in treating of every different tree that I have experience of, I shall tell the sort, and the way and management of each kind, from its being in the seed till it is fit for the axe; beginning with

The O A K.

Which is raised from the seed called the Acorn: Authors write of different kinds, but I know only of one, which I had all from England. It is certain that the oak we have from abroad, for wainscoting, and for barrels, is of a different kind; but I never could procure any acorns from these countries.

Raised, I have raised many trees, by setting the acorns in the ground where they were not to be removed; and I do think it the best way, if the vermin could be kept from destroying them. I have set some, with good success, in very bare poor ground; when the same was fenced, and no cattle suffered to go there, the grass has grown so rank, and it fell down and matted so close together, that the young shoot could not force its way through; and the field-mice, harbouring there, have destroyed me many bushels of acorns; so that the way I have taken of late

is,

is, to make a seed-bed of trenched ground, *from the* on which the acorns are put, *with the* Seed-bed; smallest end to the earth, and then covered half an inch deep. The best season for this work is, when the acorns drop in October, though I never could get mine so early; but I always put them in the ground as soon as I could procure them, if it was not in frost. After they peep above ground, they may get some earth sifted upon them; especially if set in October, for the frost may swell the ground and spue them out, and in that case they must be re-placed with the finger. After they have been in this bed for two full years, I advise the lifting of them, tho' some are for their standing another year, by a notion that an acorn in two years cannot have spent all its full substance into the plant; but I have been careful to observe that, and I could never perceive any part of it unconsumed. I therefore propose, that, *transplant-* after standing two years in the seed-bed, *ed from* they should be planted where they are *Seed-bed.* designed to stand: I thought this had been a notion of my own; but I saw, since I have used this method, a wood planted by a gentleman this way, that was in a very thriving state. What put me on making this experiment was, that the trenching ground for nurseries was expensive, and the keeping it clean was a great trouble; and I had, for many years, set out my firs from the seed-bed to where they were to stand, with good success, as I shall explain when I come to treat of that tree. Another reason was my being convinced, that every removal of a tree checks its growth, and if I could raise them all without transplantation, it would be a great advantage.

All who have wrote on oaks, advise the cutting off the carrot-root or pap, which I think quite needless, and therefore never practise. The writers on planting

Soil. take up much time in giving directions as to the soil proper for oak; but, as it is a tree that I like much, I have planted it every where; and find it thrive in rich, poor, middling, heathy, gravelly, spouty, clay and mossy ground; nay, upon the dead sand, and in short on every soil that I have: And it is visible that my oaks grow faster than any tree I can plant, the aquaticks only excepted.

Having said so much, I shall now mention the distance I would have oaks planted at. In all natural woods the trees stand close to one another; but in time the least thriving decay, or, by often cutting over, and the dropping of the trees that are left for timber, perish: by this means large oaks stand at a great distance; but I can by no means allow that they always did so, or that we should, in

Distance of a new plantation, set oaks at forty, fifty, Young Oaks. or sixty feet distance; far less, as some modern authors assert, at as many yards.

For tho' we see great trees now standing, it is more than probable that they were all formerly in a thicket, as Mr. Cook hath made very plain in his chapter on oaks; and experience may further teach us, that, if we should plant at that distance in a country subject to winds, we should have bushes, but never trees. So that it is requisite that we plant very thick, as shall be shown afterwards.

Pruning. We now come to pruning. No tree should be allowed to fork, I mean to put out two stems: one upright shoot should only be encouraged; for when there are two or more, the sap that should run all into one, is dispersed into many, and by this neglect, many millions of trees never come to the fourth of the value that they had arrived at, if due pains had been taken to have them trained up to one stem; so I recommend in the beginning to prune this and all

all other forest-trees when they are young ; at the same time I am not for leaving the tree quite without branches ; for some are necessary for drawing up the sap ; but I would only leave a few. If the tree hath been for some time neglected, begin at the undermost branches, and take them and the next row entirely away ; but when you come higher up, prune off only a branch here and there ; or shorten some of them, which must be cut away close by the body of the tree the next season : and take care to thin the head that the wind may get through ; for, if the tree is top-heavy, the wind will take such impression on it, that it will either break short, or be laid over, and perhaps never will be a straight tree ; by this way of doing, a tree may be brought to what height one pleases, without any more branches than what are necessary for drawing up the sap, and to keep the tree upright. The clearest directions for this work are to be seen in Moses Cook's 10th chapter, beginning at the middle of page 57th, where, I think, he names the most proper seasons for the first and second prunings of the oaks, and all other trees that are not ever-greens ; and to him I refer my readers. Some lop, by that I mean, cut off, the top of the oaks ; but I entirely disapprove of that practice ; for, the greater the height of an oak, the greater the value.

There is another way of managing this, and all other trees, that I think may, if begun in time, be better than pruning ; and that is, by rubbing off in the spring-time the buds from the sides of the tree, since, by checking the sap's breaking out on the side, it forces it to rise up to the top of the tree. *Budding.*

It were loss of time to tell the uses of this tree, since every body knows the value of it. Having thus far

far treated of the oak, that hath so long maintained its title of the *King of the Forest*, I shall next say something of

The BEECH.

They who write of trees, mention two kinds of this; but I know no difference. They

How raised. are to be raised from the mast, which, if it could be preserved from the vermin,

should be set in the ground without ever moving it; but that is so uncertain, by reason of the mice, that I am forced to sow them in seed-beds, and to treat them every way as the oak; so that I shall repeat nothing. But there is one great difference; for, as I

said, the oak will prosper in any soil, yet *Sail.* the beech is very shy. In good land they

thrive very well, but I think not in clay; and I am certain, not at all in wet ground; but, for dry and gravelly, none better. It is a beautiful tree, and, tho' when young they grow sometimes crooked, yet, as they grow older, they turn straight. This tree ought to be pruned and disbudded as the oak.

It makes a fine hedge for beauty in a wilderness; but I doubt it is not good for coppice, since I am told, it does not rise kindly from the root when cut down; but of this I have no experience. It is a tree very proper for avenues, walks and groves; but, I think, were the timber of it less used for bed-heads, chairs, &c. it would be better; for the worm takes it very soon. In other countries it gives a great price for fuel; but, as we have so many coal-mines and moles, I hope we shall never be reduced to the extremity of cutting down our woods for firing. I now proceed to

The

The E L M.

There are many different kinds of this tree, but I shall begin with that which hath grown long in this country, and is called the *Scots Elm*; of which there are many huge trees, both as to stature and greatness, remaining in many places, that if they had, in their youth, met with such disbuddings and prunings as I have advised, would have been surprisngly beautiful and of great value; whereas they have been allowed to fork and run out into great arms; which is an irreparable misfortune, since the timber of the elm is both strong and of a fine colour, and prettily veined, very little inferior to the Mahogany, and some of the West-India woods, so much demanded for tables, chairs, chests and cabinets.

This kind is propagated by the seed, *Raised.* which they carry plentifully every year, and is to be gathered about the beginning of June, which is the soonest they ripen in this country, tho' Mr. Evelyn and his followers affirm, that it is ripe in the beginning of April.

The way of sowing it, is in a bed well trenched and finely raked; then thrust off some of the surface of the bed with the back of the rake; lay the seed over all the bed, as the gardeners do when they sow carrots; then draw the earth over the seed. When the plants have sprung half an inch, it will not be amiss to sift on some fine earth upon them, to fix them the better; keep them free from all weeds for two years; then set them out for good and all.

I have always found this tree shy as *Soil.* to the soil, than either the beech or the oak, and I cannot say that they thrive unless upon good ground; when such is trenched and kept clean, they prosper

prosper and thrive exceedingly: but, in bad soil, they are nasty, scabbed and hide-bound things, so that, in my opinion, it is lost labour to plant them there.

Another kind of this tree is, what I have heard called the *London Elm*, which grows in great plenty in

London all the hedge-rows about that city: the
Elm. long walk at Holland-house, and the incomparable one now hedged at Kensington-garden are of this kind: it hath a

much smaller leaf than the one I have been writing of. The custom in these places is to cut off all the side-branches close by the body of the tree, and only leave a very small head, so that in winter they look, in a manner, like a very high hedge, and, in the spring, are as bare as a May-pole, except the very small head; how oft they repeat this operation, or what they make of the prunings I cannot tell.

Of this tree they make great use for pipes for carrying in water to the town, and prescribe several other uses for it: but as my design is to teach the raising of trees in the cheapest and easiest way, I refer my readers to Mr. Evelyn, or the carpenters, for the use of every tree.

I believe this one doth not carry any seed; but it
Raised. is easily raised by layers and slices taken from the roots, or by suckers.

Mr. Evelyn advises to propagate them after the following manner: "Take truncheons off the boughs, and arms of elms, cut to the scantling of a man's arm, about an ell in length: these must be chipped on each side opposite, and laid in trenches about half a foot deep, covered two or three fingers deep with good mould: the season for this work is the end of January and beginning of February, if the frost do not hinder; and after the first year, you may cut or saw the truncheons off
" in

“ in as many places as you find cause, and as the
“ shouts and rooted sprouts will direct you, for trans-
“ plantation.”

Another method proposed by him is, “ Lop a young
“ elm, the lop being about three years growth, in
“ the latter end of March, when the sap begins to
“ creep up into the boughs, and the buds are ready
“ to break out ; cut the boughs into the length
“ of four feet standing, leaving the knot where the
“ bud seems to put forth in the middle ; enter these
“ short pieces in trenches of three or four inches deep,
“ in good ground, *that is*, in good mould well trod-
“ den, and they will infallibly procure you a good
“ crop.” Besides Mr. Evelyn’s authority, I have been
advised to the same by a gentleman who pretends to
be a great planter ; but as I have only tried them this
last spring, I cannot promise for the success as to this
kind of elm.

As this kind is not raised in the seed-bed, I believe
it will be proper to have a nursery ready to set them
in for two years: this is a piece of
ground trenched, and made free from *Nursery, what.*
stones, roots and weeds : in this set
your young elms, thus raised, at a foot’s distance e-
very way ; and after two years standing transplant
them for good.

There is another kind of this tree,
called the *Dutch Elm* ; this will grow *Dutch Elm.*
upon much coarser ground than either of
the other two. I am told they never grow to thirty
feet in length ; but as all I have are young, I have
not experience of its size ; neither do I know if it
is of any use. It puts out a great number of trees
and suckers, so that it spoils all grass-walks within the
reach of its roots. Some use this kind for hedges ;
but I think neither it nor the Scots Elm fit for that
purpose,

purpose, their leaves being too broad and disagreeably rough.

One thing I had forgot, which I shall set down here, as it is necessary for all the trees I have named or am to name, that, when they are set out for good, and especially at two years old from the seed, care be taken to keep the grass and weeds from growing about the roots, otherwise they may either choak or strangle the young plant; and this I advise to be done with all the young plants, till they come away so heartily, that neither weed nor grass can stop them in their growth. I come now to

The A S H,

Only raised by the seed, called the Ashen-key. They are ripe in October, and should then be gathered and laid in a bed, as I directed about the Elm-seed, and covered the same way: this I

How managed. do as soon as they are gathered: but tho' they are sown this soon, they do not peep above the ground till the spring come twelve months after. I chuse to manage them this way rather than be at the trouble of laying them in

Plants. sand for a year; after they appear they should be let stand, and carefully weeded for two years, and then set out for good.

I advise the same care in keeping them clean about the roots, the disbudding and pruning them, as of

Soil. the other trees I have mentioned. It is hard to say any thing of the soil they most delight in; for tho' the rich one is best, generally, for all kinds of trees; yet sometimes an Ash is seen to thrive very well where it is quite otherwise, tho' within two yards of the soil there are poor hide-bound sticks. I know not if cutting such by the ground in the spring may make

make them thrive the better, but I shall try it. This makes me wonder why they who have wrote about woods, should lay it down as a rule, that, in planting woods, every third tree should be ash, since it is a tree very shy, if the soil is not proper for it. In good ground, trenched and kept clean, they thrive prodigiously: it is long in putting out the leaf; but holds it long the same season: they shed them as early as other trees.

It is of great and general use, and therefore it should be encouraged where the soil is proper for it; but should not, they say, be planted near corn-fields, its roots running within reach of the plough, and its leaves taint the grass. This tree carefully managed, as I have directed, may be brought to great height and largeness, and of consequence value. The next I shall take notice of is

The WALNUT.

Only propagated by the nut: they talk of different kinds of it; but as all we get are from France, they seem to be of the same kind.

This tree, of all others, should, if possible, never be removed, since it suffers more by it than any tree I know; but the vermin are so fond of it, that it is very hard to preserve a single nut set, to stand from being eat by them: so I order them to be managed as the oak. The side-branches and buds of this tree should be carefully taken off; and, what I can never say too much against, forking should be prevented; for no tree is more apt to fork than this one, and none loses more of its value by doing so. This is the most valuable tree we have; had we greater plenty of it, the furniture of our houses, such as bed-heads, chairs, &c. that are now commonly made of

beech, would be much handsomer, and more durable. Besides, it is much sought after by the cabinet-maker, so that I wish it were more propagated. The next shall treat of is

The CHESNUT:

Which, tho' it can be raised from layers, comes much better from the nut, and ought never to be removed; but as that is so difficult to do
Set. the next best way is to manage them as all things like the oak.

It is very apt to put out suckers from the roots and many side-branches, both which should
Pruned. be carefully taken off; for as it inclines to spread much if this is not done, it is not easy to get it to a great height, which, if care be taken of it, may be done.

Why a late reverend author hath placed the chestnut among the lesser kind of trees, I know not, since I have seen them very high, and proportionally large; and that there is the remains of one in England, that, I think, hath been looked upon as the greatest tree in it.

It is the best under-wood except the mapple, and therefore is good coppice.

Soil. It loves the same kind of soil as the walnut, which doth best upon a rich land.¹

Whether these nuts produced in Britain will prosper, I have never tried; for, tho' sometimes they are perfectly formed, grow hard, and ripen very well, yet these that come from France or
Spanish and French nuts Spain are much fairer; so that I always chused to set them. I have seen a room,
best. which a gentleman wainscotted with chestnuts of his own planting, which seemed

to me very pretty : and Mr. Evelyn tells many Uses of them ; but, as I said before, that is not my business. There is another kind, called,

The HORSE-CHESNUT,

Raised by the nut, which is exceedingly better. I think it is the most beautiful tree I ever saw. It hath a clear, smooth, shining bark, and naturally grows upright ; hath the broadest leaf of any tree we have. It carries a fair flower, most of them white, tho' I hear some have them red, delightful to look at, and is succeeded by the nut ; but then it hath the misfortune to be very brittle, and cannot resist the wind, that snaps it over when it is in its greatest beauty ; yet when cut hedge-ways, as one at Highgate, it stands the storm, and grows to a tolerable height. But then the hedging of trees, in my opinion, takes away much of the beauty they have in their natural shape. It puts out its leaves among the first of our trees ; but I never understood that it was of any kind of use ; yet it is very ornamental, and I think, for that reason ought to be propagated, but not in woods, like the sweet chesnut. I come now to

The PLANE.

I believe this is what in England goes by the name of the Sycamore ; and, as far as I can observe, it seems to have been the favourite tree of this country in the time of our forefathers ; for there is no old seat, gentleman's house, or any place where trees are set to grow, but the plane-trees are the most numer-

in July with its fruit, which it seldom fails to carry. Mr. Cook talks much of this tree. It is very brittle; yet 'tis said they make frames of it to their rush-bottomed chairs in Holland. It ought, in my opinion, to be propagated. I shall now write of a very beautiful tree,

The QUICK-BEAM,

For so it is called in England, but here the Rowan or Rhoddan-tree. The branches of this tree grow almost all upright, so that it is difficult to keep it from forking, yet may be done with care. It hath a smooth bark, a narrow leaf, and carries a fine cluster of flowers in May, that makes a fine show; and the plentiful crop of red berries which hang on it, gives it a very rich look, and is a great relief to the thrushes and black-birds.

It is easily raised by the berries; rub off the *Raised.* pulp, and sow the seed in the seed-bed: Do the same with the black-cherry and service. The quick-beam seed is two years in the bed before it peep, as the ash and horn-beam. I never saw but one of this kind that was large; it had been cut down, and came up in three great branches from the root, and therefore I doubt nothing of their growing great and high enough.

It thrives almost in every soil, and prospers on rocks where there is very little thickness of earth. I am told by a friend, that, unless the earth is now and then stirred about the roots of them, they grow bark-bound and unthriving; but this, should it happen, would be easily remedied, I think it ought to be more planted: It hath been little made use of in England, till of late, that they are got into the gardens of Kensington.

ington. Mr. Evelyn tells its uses ; but I shall name one which he doth not mention, which is, that the bark sells to the tanners with that of the oak.

I go now to a tree that I cannot charge my memory with having ever seen in England ; nor did I even see it ever mentioned in any author, which I have wondered at ; it is called

The LABURNUM,
OR
PEASE-COD-TREE.

I shall first describe it, and then tell how it is raised. It hath a yellowish thin bark, with leaves almost of the same colour, shaped like the Trifoil. It puts out a flower like the Hilly-ash flower ; only it stands up, and is white or purple ; but the laburnum is yellow, and hangs down like a bunch of grapes.

I have seen so many on a tree of mine, *Fruit.* that it looked as if it had been all yellow.

After the flower there comes as many small pease-cods as there were blossoms, full of small pease, which when ripe are gathered and threshed. They do not value what soil they are set in, nor do they require much looking after : They are sown in a

bed, and removed at two years, and *Raised.* then managed like other trees. The hares

are so fond of them, that I set a great many of them to keep these creatures from my other trees : They are vastly bitter ; both the bark and the seed are a strong vomit. I have of them pretty high, and, I believe, with care may be trained up to great trees.

The timber is very hard, and of a fine colour, viz. a bright yellow with blackish purple veins. Were it large enough to be sawn into planks, it would make
most

most charming tables. The quick-beam and this tree in a row, planted alternately, have very good effects. I go on to

The M A P P L E.

It is to be raised from suckers and layers, but best from the key, like the sycamore; which lies as long without springing as the ash, and should be managed in every thing like it.

Tho' we have few large trees of this kind in this country, yet I have seen them very great in England. 'Tis a beautiful tree, but the dropping is so pernicious to every other plant, that no tree will grow under it; tho' the mapple itself will thrive under any thing, the fir (which is the very worst for under-wood) not excepted.

I have little experience of this tree myself. Mr. Cook says, it affects dry ground most, or a bank.

Mr. Evelyn is very eloquent in the praise of this timber, and is very extravagant when he speaks of the high value which the ancients put upon tables of it. I know it is much sought after by the cabinet-makers, and makes a fine hedge in a wilderness, changing the colour of its leaf twice at least every year. I proceed to

The L I M E.

It is best raised by the seed, tho' I could not raise any that way; the reason I take to be is, that it doth not come to perfection here, and not every year in England. I have often given commission to get it from Holland, but these I employed always neglected it; but I have raised many by layers. There are two kinds of this tree, both of which are raised the same way; the

the one with a large round leaf, and the twigs almost as red as coral in winter. This I prefer to the other, which hath green twigs, and the leaf more pointed, and less.

It should be much pruned; yet it ought to be done with the greatest discretion: for if it is allowed to grow thick in the head, the wind may harm it.

Pruned.

It makes a fine hedge, either feathered from the root, and then it may be set at two foot distance, or set from six to ten, trained up to what height you please, with a clean stem, and then hedged above that, and either way very beautiful. Some rear them to standards, and then clip them in pyramids; but I do not like that way, as it looks too constrained: besides the natural shape of a lime looks better. It grows to be a large tree; tho' I think it is more for ornament than use, yet Mr. Evelyn finds many. I now shall say something of

Uses.

THE HAZEL.

Tho' I reckon it rather a bush than a tree. They are raised from the nut, and managed like the other puts I have mentioned; but as they are of much less use, I have been at less pains about them. They serve for under-wood, and for binding up faggots, and are of great use to the sieve-maker; but after all, the demand for this plant is but very small. Dry ground is recommended for them, but I am sure I have seen them in a quite different soil.

Uses.

Soil.

I say nothing of the two kinds of plantains, tho' they are coming in request here, as I have no experience of them. I therefore conclude this chapter, and begin

CHAP. II.

OF AQUATICKS.

The BIRCH.

AN amphibious tree, that thrives upon rich, poor, wet, dry, sandy or rocky land.

It hath a seed, but I am not skilful to direct how to manage it; but as soon as I am, I shall let it be known: The method I have hitherto taken, hath been to gather them in the woods, where they come up plentifully from the shaken or blown seed; but as the proprietors of these woods are not careful enough to keep cattle from pasturing in them, they are mostly eaten over, and therefore I was obliged to cut them close when I planted them: But as they begin to come up in my own woods, where no cattle come, I hope to be supplied that way, tho' the raising them from the seed should misgive, which I wish it may not, because these thrive in whatever soil.

It sometimes comes to be a great tall tree; it is excellent for coppice, smells sweetly after rains, and no tree is more asked after by the country-people, both for their houses, ploughs and utensils of husbandry.

The way I take to remove them, is to draw them with great care, either before or in autumn, and set them where they are to stand for good. After they have stood for a year, cut them close by the ground in the spring, this will make them rise in tufts, and they may be easily reduced to one stem, and so be brought to a tree.

By topping them in the spring, they extract a liquor, which, after fermentation, becomes a spirituous, delicious.

delicious wholesome wine; but as I am not writing about brewing, I shall refer you to the two authors I have so often quoted, and to the transactions of the Royal Society, for the receipt of this wine.

I have planted many of this kind of tree, and intend to plant many more of them, if I live, since I think them more profitable than

The A L D E R,

For which tree I have laid out more money than for all the rest about this place; for I got them from Holland, and was not only imposed upon as to the price, but had the misfortune to employ unskilful people to plant most of them: They set them so deep that they fretted at the top, and died afterwards; so that they were twice cut over: They are more backward in thriving than any tree about this place; yet, I believe, there are more thriving ones, than, were they ready for the axe, I could get sold. It is a handsome tree, with a broad, dark green leaf.

I know not of what value the timber is; but the branches cut, then fagotted, and laid in the bottom of drains for carrying off water, and whins or furzes laid a top of them, makes it so that the ploughs go upon dry ground: This I have often done. The shade of this tree doth no hurt to the grass.

I have been so little pleased with this kind, that I have not been at the trouble to know how it is raised; only I have caused gather them amongst the old ones, as I do the birch. They say they will do by cuttings laid some time in the water, then set like willows.

They grow both in wet and dry soil. Mr. Evelyn finds they are of great use: the best I know of I have told, and that other one of planting them upon the banks

banks of rivers, to hinder the water from making breaches, the roots of it keeping the ground firm. I shall now say very little of

The P O P L A R.

We have few poplars of any size in this country that I know of, but having heard much of their height and greatness, I got some cuttings of them: They hitherto prosper very well: They have a whitish bark and green leaf.

What their uses are, I do not know. They are raised by cuttings as easily as the willow. I wish by the same means I could raise

The A B E L E.

But as yet I know no other way than by the young plants, that run from the roots of an older one, or where there hath been once a nursery of them; for were they never so carefully removed, yet new ones still come up: Or if an abele of a middle age is cut down, the ground about it wrought, and no cattle suffered to come near it, a nursery of them may soon be got. I think the tallest trees I ever saw were of this kind, and carried up a great body with them. I know none that runs up so quick as this does, planted in a bottom where it is sheltered, but if exposed to the winds, yields terribly. It makes an agreeable variety, mixed with trees of a deeper green; for the bark and leaf are the whitest of any in this country. They are looked on as of little use; but an old gentleman told me, that, in a barn which he had roofed with ash and elm, he put on some abele, which lasted so well, that when the other were rotten, and he was forced to renew the roof, he left the abele standing

ing

Raising of FOREST-TREES.

25

ing as being quite sound. I hear they make great use of them now in England.

They thrive sometimes in spouty, and they do very well in sandy ground, where scarce any thing can well be expected to grow, tho' some trees will, as I shall shew by and by. I own I am very fond of the abele, and am resolved to propagate them as much as I can. Now of

THE ASPIN-TREE,

OR

QUAKING-ASP,

As it is called in this country; it is a tree that I would not have given place to in my papers, were it not that I am writing to encourage the propagation of trees; and therefore think myself bound, as an honest man, to give every one, who is at the trouble of reading what I write, warning, that I reckon it time thrown away bestowed upon this weed, and therefore I root them out wherever I meet with them in my grounds. I heard them so much praised, that I was at a great deal of trouble to procure a quantity of them. I find them shyer to take with the ground than the best tree; but if once they do, there is hardly any possibility of rooting them out. They never, that I saw, rise to any tolerable height or size. They decay by the time that other trees come to look well.

I know of no use that they are for; but their destructive nature I can attest, such as running thro' the whole ground, spoiling the grass and every thing else near them; so that, were my advice taken, they who are so unlucky as to have them should root them out, and none should attempt to poison their grounds with so pernicious a weed. Next of

C

The

The W I L L O W.

Of this there are innumerable kinds. Mr. Evelyn names so many, and I have been so confused in reading him, that I could not know which of them to choose; till I had quite forgot what he said; and therefore I shall only mention what I know by experience are the best kinds.

The only way I know of raising them, is, by cuttings, either in wrought ground, or by making holes with a stake, sharpened at the end, and drove into the ground: When the stake is drawn out, set in the willow, and fill the hole round it with earth to keep it firm.

The best kind I know to be raised to trees, is, what we call the Huntington Willow: It will grow almost as high and great as any tree, if it is allowed to run up, and care taken to keep it from forking and side-arms; or, if lopped above the reach of cattle, it will soon put out a large head, so that, in four or five years at the longest, these shoots may be cut; and, if they have room to spread, from every two trees a cart-load of large branches may be got, and so on for every four or five years. What advantage would this be to those who cannot have coal and peat, but at a very great distance and expence? I think it is worth their consideration, tho' I had never weight enough to persuade any in that situation to try it; tho' they had ground very proper for it. Nor deth the willow, thus managed, and set at a distance, at all hinder the grazing. Stakes of seven or eight foot long, or as high as to be without the reach of cattle, may be set in February or October, without any heads, and, if the side-buds are rubbed off near the top, all the sap will run up, and soon set out a head: But the disbudding should

should be continued for some years, till the bark grow so firm as not to put out any more: This is neither great expence nor trouble, and might be of great advantage; and save the lopping of more valuable trees; for it burns very well, nor do I doubt but the timber may be of use.

I have another sort which might be managed the same way, tho' not altogether so quick a grower, and which, some of my workmen say, is almost as useful as the oak, for fork, shovel, and spade handles, nay, for some parts of carts.

These two require a good soil; as doth the bay-willow, with a bright, shining, green leaf.

There are many dwarfs among the willows; but these I have mentioned may be called trees. I was once over-persuaded to lay out too much money upon trenching ground for planting willows for hoops, as a profitable return; but the yearly rubbing off the buds was a constant labour, and, when they were cut, I did not get so much as to make me think it worth while to continue the trouble.

The very worst kind of willow is for the use of the thatcher, and for binding faggots, besides a small kind of it for making baskets.

Before I begin to speak of evergreens, I shall give some short directions, besides what are already mentioned, as to

The Method of P L A N T I N G.

In which I shall deliver the methods I took myself, and which I have supported by my own experience.

I first trenched the ground, and then set the plants, small and young; I think from the seed-bed best. I set them close to one another, and the youngness of the plants made them take root sooner than if

they had been older, and the ground became natural to them; the setting them close together made every one shelter the other, and so rise faster: I then sowed turnip-seed amongst them; this kept down the weeds the first summer, and the turnips being dug in the winter, did great service to the trees, and made the next cleansing easier, so that the trees grew so fast, that very much cleansing was not necessary. To this it hath been objected,

OBJECT. I. Trenching is expensive, and keeping the ground clean from weeds and grass, costs labour, and, of course, money.

To this I answer; Trenching is to be done but once, and, as what I have said of the turnip is true, I hope that will not be so great a labour. I own it is expensive to trench ground; but, when one sees the advantage it is to the growth of their trees, I hope they will not grudge it to their wilderness, or near their houses; especially since the other methods I have proposed for planting, are so much cheaper than what hath been put in practice by any body but myself.

OBJ. II. This way takes a great many plants.

I answer, it doth: But I have shown, that they are, for the most part, raised from the seed, which is very cheap; that the making seed-beds is not dear, and that all trees should be removed for good, after they have stood for two years, I mean, after their first peeping above ground, some lying longer before they appear than others.

OBJ. III. A great many trees must be lost, when they are set so close; one must kill another, since the ground cannot afford nourishment for them all.

I answer, I have proved that the expence is not great, and trees set close together, force one another to run up; but, as some will always thrive better than others, these, with their dropping on the smaller ones, make

make them dwindle, and die at last; if so, the loss is but a trifle. But I propose to cut down these unthriving ones, and perhaps they may shoot up for underwood, and by doing so, may often yield some profit, and can do no harm to these left standing, as I said about the oaks. This hath been my practice, and I recommend it; tho' I was advised to lift the less thriving ones, and plant them somewhere else; but this I could not agree to; for, in the taking them up, the spade must not only cut too much from the root of the plant to be lifted, but of those designed to stand; so that I think the cutting of them down the best way.

As to the ground's not being able to nourish so many trees; I have seen a nursery that was quite neglected, where the plants, having been at first set within a foot of one another, run up to a great height, and were so large that they almost touched one another; now, by my way of cutting them down, they will not require so much nourishment; but, if it should be suspected that they draw too much juice from the trees left to stand, it is easy to cut them below ground, and so to kill them.

Indeed, tho' some soils are of stiff clay, and that trenching is of great service to them, the trees ought to be set upon the surface, and earth thrown upon the roots to keep them fixed, that the roots may take their own way.

Another special caveat that I would recommend, is, that all four-footed beasts be kept from your ground. I did well enough to hinder all sheep and larger cattle, yet the hares did me much harm; but I do all I can to destroy them too.

Now, tho' I have all along advised to plant the tree from the seed-bed, yet it may be necessary to plant walks, or carry views thro' inclosures or corn-fields;

in which case it will be fit to have plants taken from the seed-bed, and set in nursery-ground, and several times removed, till the roots are so used to it that they may be transplanted, and their branches high enough to be out of the reach of cattle. I own this is a troublesome work; but, as it is in some cases necessary, so it is good to be provided for it: But I think such trees, planted this way, ought to be staked for some years, both to keep them from being shaken at the roots by the wind, and to be kept firm till they are strong enough to bear the rubbing of beasts. I shall say nothing of the transplanting of large trees in the middle of summer, since that is a work only to be done with few trees, and no great planter can ever make profit by that way.

One thing more, and I shall go to the evergreens.

If an oak, ash, or elm, is crooked, slit the stem quite through the bark, and it will grow straight. Where any tree is eat by a beast, cut it off below where it is bit. I say nothing to the way of laying trees, or taking off slips with a little of the mother's root; nor of suckers; because every author hath a chapter upon this head, and no gardener but knows it. I proceed, therefore, to the next thing proposed, viz

CH A P. III.

OF EVERGREENS,

PARTICULARLY,

F I R S.

AS I believe I have raised and planted out more of this kind of tree than ever any one man did, so I have:

I have studied the best methods of doing it, and have received but little help from any author in the management of it ; for they all write so ignorantly about it, that I am surprised they were not ashamed to set their names to a book containing such manifest blunders with regard to this one tree. They plainly betray their want of skill, nay, probity ; and, what is still more astonishing, that, instead of correcting the faults of other authors, they who have wrote last blunder most : But, as I am not to waste my time in finding out the faults of others, I shall tell the methods I have used myself, for at least the space of thirty years.

In one of Mr. Bradly's monthly papers, there is a letter, signed JOHN EDINBURGH, that might have made them who wrote since, see, that the author of that letter understood what he was about ; yet I differ in some things from him : And therefore I shall trace the fir-tree, I mean the SCOTS FIR, from the time of gathering the seed, till the tree is ready for the axe ; and, you may depend upon it, I shall say nothing but what I know by experience to be true.

It is only to be raised by the seed, which is contained in a cone, or, as it is called here, a Clog, that hangs down from the branches. When I began to plant, my trees scarcely carried any, and I was at great pains to get the seed. I heard there were fine fir-woods in the Highlands, where the inhabitants bring it in great quantities to sell in the low-countries, and from whence I for some time brought my seed. The right way of getting the seed out of the cones, is to spread them upon a canvas, or some cloth exposed to the sun, and to have men attending to carry them under cover, when the sun grows low, or when it threatens rain. The time of gathering the cones is in January or February, so that there is but little time for getting out the seed before sowing-time, and therefore

we are diligent to take every sun-shine to have the cones opened. When we see any number open, we put them in a wire-sieve, and shake them till the seed falls out: This is done till the latter end of April:

then the seed should be sown, as I shall show a little afterwards. The remaining cones are carried out of the sun, and not exposed to it till the hottest time in July and August; then they open very fast, and are shaken in the sieve till all the seed falls out. This seed I keep

Seed sown. in tea-canisters or dry bladders till next fowing-time, in a dry, cool place, where no fire or sun comes; but the Highland-ers are too lazy to be at so much trouble;

Seed pre-served. for after they have gathered the cones, they lay them upon a kiln; this opens them quickly, tho' it often over-dries the seed that it cannot grow. I own the cones may be opened before a fire, and little hurt done to the seed; but great care must be taken that they do not lie too near, or too long before the fire, lest it be as bad as the kiln, and endanger your house, as mine once was, by the carelessness of a servant-maid: After this I bought my seed from an old gardener, till my own trees came to carry enough, from whom likewise I learned this way of keeping my seed over year.

In the end of April, I have seed-beds prepared, by trenching them pretty deep, and made as free from weeds, grass-roots and stones as possible,

Soil for a seed-bed. and the earth made very fine. The soil should be of a middle sort, neither clay nor sandy, neither too rich nor too poor;

the earth turned off with the back of the rake, as our gardeners do for carrots; then the seed sown so thick as to cover the bed; and lastly, the earth drawn over, till all the seed is covered: then, in a few days I cause

set on some more fine earth. The next care is to preserve it from the small birds, who are very fond of it, and more so when it peeps; for the young plants bring up the husks of the seeds upon their tops. I once had frames, the breadth and length of the beds, covered with nets; but of late I have boys that sit by them from sun-rising till sun-setting, till they are all come up, and the husks dropt off. If the plants come up thick, as they ought, there will be no need of weeding them for that year they are sown;

but if any appear, they must be pulled up with great care, lest, with the weeds, the young plants are also drawn. Before the

winter I cause throw on some chaff or saw-dust that hath lain some time, or what is beat from the

flax when dressed; this preserves the plants from the frost, and may hinder the ground from swelling, which if it do, it is apt

to spue up the young plants. In these beds they ought to stand two years, for example, from the latter end of April 1734, till the seed is sown in March 1736: From thence to the end of April 1736, they

ought to be managed in the following manner: When you take up your young plants, let there be standing by a tub of earth and water, mixed to the consistency of pap; in this let the roots be dipped: and on the roots of every six or seven handfuls of plants, laid in a basket, lay a handful of this pap, to keep the roots from drying, which they are apt to do with either the sun or wind, and one man can carry a great many this way. Formerly I had pits ready dug, and the earth with the turf undermost filled on, and then set the plant with a dibble, taking care to set it no deeper than it stood in the seed-bed; and this is a very necessary caution in planting

from the frost.

Kept from frost.

How many plants, let there be standing by a tub of earth and water, mixed to the consistency of pap; in this let the roots be dipped: and on the roots of every six or seven handfuls of plants, laid in a basket, lay a handful of this pap, to keep the roots from drying, which they are apt to do with either the sun or wind, and one man can carry a great many this way. Formerly I had pits ready dug, and the earth with the turf undermost filled on, and then set the plant with a dibble, taking care to set it no deeper than it stood in the seed-bed; and this is a very necessary caution in planting

drawn for setting.

setting.

and on the roots of every six or seven handfuls of plants, laid in a basket, lay a handful of this pap, to keep the roots from drying, which they are apt to do with either the sun or wind, and one man can carry a great many this way. Formerly I had pits ready dug, and the earth with the turf undermost filled on, and then set the plant with a dibble, taking care to set it no deeper than it stood in the seed-bed; and this is a very necessary caution in planting

ing

ing

ing all kinds of trees ; for deep setting is one of the greatest errors : But now I have got a quicker way :

*How the
firs are
set out.* I make one to go with a spade, who strikes it into the ground, presses it backwards and forwards till the slit is made wide enough to receive the root, which the man with the basket sets in, and then with his foot presses the slit together. This way how-

ever will not succeed but where the ground is bare or poor ; for if it is rich, or the grass rank, it may smother or strangle the plant : in that case the pits must be used, and, as I have advised about other trees, the grass and weeds must be taken away from the roots ; for at least two years ; against which time, I think they will prosper, if cattle get not at them. But I believe I have found out a better way for this, and all other trees of two years from the seed, which is, If a new plantation is designed, where the land is rank, the surface ought to be pared with a paring spade, and the turf carried off to be mixed with lime, or some other manure for enriching the corn-land. The ground being thus pared, the plants may be set as before directed. I have used this way with success ; for before the grass and weeds can arise, the trees are out of danger from them. Others advise the letting firs stand three years in the seed-bed, but I know it is wrong, having tried it, and they almost all died. Some advise removing them to nursery, a needless expence ! since they thrive better the other way, are easily carried, and save labour, time and trees.

The distance I set my firs at is never above five feet, when I plant oak, beech, &c. amongst them ; but, when alone, nearer, in no regular way ; for I don't think it a valuable tree. They look pretty at a distance in thickets, and in winter, and will thrive in the worst soil, even in dead sand.

Raising of FOREST-TREES.

It is surprising to see how fast oaks, and other able trees will grow, when planted under the shelter of firs: but I take particular care that the firs do not oppress these trees, by leaning on, or over them; this I prevent by pruning the branches of the firs every year after the sap is at rest by the first frost: but, where they and the other trees thrive well, I cut down the firs to make room for the others. I was once an enemy to pruning of firs; because what we get in Norway never meet with that treatment; but, since I would entirely spoil the trees amongst them, if they were not pruned, I do it; but, where firs stand close together, and no trees mixed with them, I let them prune themselves, which they do for want of air by rubbing upon one another: but, if they must be pruned, it is fit to begin only when the branches are small, that the bark may the sooner cover the wound, and, as they never shoot out on the sides any more, this work is to be done but once in one place. The I propose is, after a fir has been set out for three years to begin and cut away the undermost stories or branches for that is the form they grow in, and after that once off every year.

I now gather cones from the firs that *Best* have the reddest wood, easy to be known from their having been pruned; for, let people say what they please, as to there being but one kind of fir, and that, all the difference we see in the timber is owing to the age of the tree, or the soil it grows on, I am convinced it is otherwise: for I once cut down some of about forty years old, which I thought grew too near my house, and stood within a few yards of one another, some of them were red and others white and spongy, tho' the seed was all of the same parcel, sown in the same spot, and transplanted the same day. Au

Authors say they should be sown thin, six seeds in half a foot square ; but I am never pleased if mine come not up as thick as cresses. They likewise advise removing them from a seed-bed to a nursery ; but, I hope, what I have said will convince you that the way I take is much better and cheaper. It is said that they will not grow on a sandy soil, but I can prove, by hundreds of thousands, that they do on dead sand, that had scarcely one pile of grass upon it.

That there are many kinds of firs, I do not deny, since I do not know if what grows in Norway be the same with ours. I am of opinion, that what comes from Sweden differs from the Norway fir ; and we have both the pitch and silver fir very unlike our kind, but to be raised the same way. Joiners disagree about the goodness of the timber of the two last.

GREAT PINE. I have tried the Great Pine with little success ; whether it was owing to the climate, or want of skill, I know not ; but
PINASTER. the pinaster, managed like the fir, doth very well.

EVERGREEN. Of other evergreens that grow large,
OAK, and there is the evergreen-oak and cork-tree.
CORK-TREE. I have been told, that these two trees, managed like the oak, grow large enough to be fit for ship timber ; but whether they will do so in this country I cannot hitherto pretend to say. I have raised a great many of them, but they are all of them very young ; neither did I ever see a large one but once, and there was a high wall betwixt it and me ; but they are much praised of late. I have raised a great many of them from the seed, but they are very ill to transplant, and the vermin are very fond of the acorn ; and, as I don't think the
 oldest

oldest I have seen in this country are pretty even in winter, I am not fond of them.

I doubt not but the cedar of Lebanon, CEDAR.
had we the cones, would prosper as well
in this country as the common Scots fir, seeing I have
seen them in very much exposed places: For the Ber-
mudas cedar, all I ever saw of them seem to be dwarfs,
and a kind of junipers.

The yew, if not kept down by formal YEW:
clipping, arrives to great beauty and value;
but it requires many years, besides care in the ma-
nagement, to bring them to a tolerable size; and there-
fore few care to plant them, since, for these fifty years
past, the clipping, and, I think, the spoiling of them,
has been in practice. I have now cut all the feathering
off my yews, and reduced them to single stems; how
they will succeed I cannot tell, but I shall never try
to put any evergreen in any shape but its own, unless
in a hedge.

As to the holly, when it is trained HOLLY.
up to a tree, it is a very beautiful plant;
but is likewise spoiled by clipping. I have observed,
that wherever there is a large yew or holly tree, every
one is liberal in their praises; but, because clipping
them is so much in fashion, none has courage enough
to plant them for trees; though I not only do it, but
have reduced my pyramids, and hope to bring them
to their natural shapes.

I intend to try the training of the cher- BAYS.
ry-bay, and the laurel, to trees; and I
have some young ones that give me great hopes of
success. There are, besides, the sweet-bay, phylera,
and alaternus; these I intend to raise to as great a
height as I can. I have none of the large box here,
but I intend to get some. We have the laurustinus
and arbutus, which are the only bushes here; and a
few larch, which I believe may be worth while to

propagate: I neither like the Swedish nor common juniper, far less the Savine. I shall now speak a little of

A W I L D E R N E S S.

As it is only raised for shade and ornament, and is laid out in what figure the owner pleases, there can be no rule given: They have not been long introduced into this country, and the way they were first laid out was, They first pitched on a center with straight views from it, terminating in as fine a prospect as could be had; then were there serpentine walks that run thro' the whole, hedged like the straight walks, and the angles planted with variety of different trees; though now they are weary of the hedges. But people who make it their business to lay out ground for gentlemen, are, in my opinion, very unfit for it, for they are too formal and stiff; besides, they make every thing so bushy, that they crowd the ground too much. Were I to plant a wilderness, there should be nothing in it but ever-greens, flowering-shrubs, trees that carry a fine blossom, and a kind of willow, that hath a bark of a bright yellow. In winter, the ever-greens look, when every thing else is bare. I shall now conclude all I have to say of trees, by adding something

O F C O P P I C E.

I have read of many ways of raising them: Some advise plowing the ground with a good deep furrow, as a most expeditious way; but then this must be fallen about, at least a year before sowing; for the ground will require to be fallowed and made fine: But instead of sowing, I would prefer the raising the plants in the seed-bed for two years, otherwise, some seeds lying in the ground so much longer than others, while they
are

are cleaning the plants that are come up, they are digging up with the hoe, or treading down these that have not appeared. Others advise a still more expensive way, that is, to leave four foot of solid ground, then to dig up four foot next to it, and throw it upon that which was untouched; this will double the ground and make the plants grow better; they say the falling of the leaves will fill up these ditches, and the roots will run from one bank to another; but, as I never tried any of these ways, I shall not pretend to give any advice about them. What coppice we have, seem to be natural. I have always disapproved of cutting all down at a time, since, if some seedling oaks, or other fine trees, were left to stand at every felling, they might come to be great trees, without doing harm to the under-wood, since the mapple, the sweet chesnut, the hazel and the sycamour, will grow under the drop of other trees. I think a coppice, especially thus ordered, a pretty thing; but, as I want experience of them, I shall not go on writing in the dark. And now, having performed what I have promised, viz. to let you know my method of raising and managing trees, I shall next say something of fences.

C H A P. IV.

OF F E N C E S.

I HAVE tried many kinds of fences, but, not seeing these that were made here sufficient, nor approving of the husbandry of this place, I got a farmer and his family from Dorsetshire, in hopes that he would instruct my people in a right way of inclosing, and teach them how to manage grass-seeds. The first fence he made was after this manner: He made a ditch four foot wide at top, and one at bottom; six foot from that, he made such another: the earth of both he

threw between them; on the sides of which he planted thorns, and trees on the top; but I found the cattle scrambled up and eat all the plants. I then made ditches as I had done before; but laid the first turf on the edge of the ditch, with the green side down; upon this I laid a row of thorns at eighteen inches distance, leaving about an inch and half of the thorn lying over the ditch, having cut away the rest; these I covered with some earth, and laid another turf with the grass-side outmost; then a row of thorns upon it; but, tho' they were eighteen inches distant from one another, these being laid in the intervals, there was but nine inches betwixt them and the row below them. Upon this I laid another turf the same way, and a row of thorns, or quicks, just above the undermost row, and then threw the earth out of the ditch upon the quicks; and as I did so upon the other side, the rest lay betwixt the ditches: But I sometimes left thirty, forty, or fifty feet betwixt the ditches, which I stuck full of trees, which I called strips of planting: And, I think, where the fences are sufficient, that the trees may be brought up, so as it will have a very good effect, by beautifying the country, warming the ground, and raising so many more trees. But I did not find the fences good enough, and therefore tried this method; I drew two lines, nine foot from one another, the length of the field; lifted the turf without the lines, laid them edge-ways with the grass-side outmost; I raised both the banks together, filling in the earth that was pared off between them, till I raised a solid mount of earth five foot high, nine at bottom, drawn in to three and an half at top. On this green bank I set hollies upright, and the border they are set on being hollowed a little, to keep in the moisture, tho' they grew slow at first, are now a sufficient handsome fence. This was for the fence on the road side; but, dividing this field in-

to fix, I made only half-banks, that is to say, they were only grass on the out-side, and the earth thrown up was wrought into a border, and the holly-hedge planted on that: I then made a broad strip of planting, and beyond that, the other fence like the former. But the best and most secure fence I have tried, except stone and lime walls, which are very expensive, is the raising the banks, as I have set down in the second place, but without quicks; and when it is high enough, fence it up with dry stone: But it must be observed, that this stone-wall must lean very little to the earth-bank, lest the weight bring it down: then let it be pared in the inclosure-side, which will make it slop to the wall. This earth being the best, as it is the surface, should be thrown over the wall, to make a border either for quicks or holly. These are some of the ways I have tried, and the last is the best. As stones are ill to be had, I am resolved to follow the advice of a skilful gentleman living near Windsor-forest, to whom I wrote, and got the following advice.

“ Since you tell me you are endeavouring to make
 “ your fences good, and as I am in a country, where,
 “ I believe, they are the best and strongest in Eng-
 “ land, and made and kept the cheapest, I shall tell
 “ you something of them. You know, that, over most
 “ of England, they make much use of the sloe,
 “ or black thorn, and common bramble: I have
 “ long been of opinion, that a mixture of these makes
 “ much the best fences for clipping. The white-
 “ thorn-hedge, as in gardens, is an expense that far-
 “ mers cannot be at, and without that they will grow
 “ thin, so that the sheep will get through, and the
 “ greater cattle will soon follow: besides, the keeping
 “ of them regular with sheers, is expensive, and their
 “ being kept low doth not warm the ground so well
 “ as if high. They have ditches, as usual, and plant
 “ the hedges with white-thorn, mixed with mapple,
 “ crabs,

“crabs, hazel, elder, oak, elm, and ash; and the
 “banks on each side, they ram full of black-thorn,
 “bramble, and common briar, to keep it close at
 “the root; and this makes so strong a fence, that no-
 “thing can pass. It is necessity makes them keep
 “their fences so strong; for they cannot use pailing,
 “but for a gate, and must not disturb the deer, if
 “once they get within an inclosure, but stand with
 “their arms across, and see a herd of them destroy a
 “coppice-wood, on a field of ripe corn, the inclo-
 “ed land being stole from the forest; and if they
 “don't submit, the keepers will bring an action against
 “them, which will end in shewing a title. I walked in
 “lanes a mile long, with a hedge on each hand, ten
 “foot high, so close with brambles, interwoven with
 “crabs, white-thorn, mapple, &c. that no bird could
 “get through.

“When they cut ower, which they do not so of-
 “ten, as in countries where their fences are only a-
 “gainst horses and black cattle, they don't plash
 “them, which weakens the roots, but cut them a
 “foot and an half above the top of the hedge; for
 “what is on the banks they cut close; then they stick
 “in dry thorn-bushes a-top, to stand as high, or high-
 “er, than the stumps of the white-thorn, crabs, &c.
 “and hang upon the stumps; bushes which cover all
 “the sides of the banks; and the roots of the stumps
 “being strong, they throw out shoots of half an
 “yard long the first year; the stuff upon the banks
 “runs up upon the dry thorns, which have been laid
 “on them as thick as in a seed-bed, and in two years
 “a stag will sooner take a brick-wall. The gate of
 “such an inclosure, if not stuck full of bushes, is
 “the weakest part of the fence. The black-thorn is
 “the best for their use; it is thicker, tougher, and
 “lasts longer.

“A strong hedge, when cut, yields a great deal of
 “money,

“ money, besides paying the charges. They make
“ faggots of the thorn, five or six foot long; these they
“ sell to overseers of the high-ways, who lay them at
“ the bottom with stones and gravel over them: They
“ are tough and don't yield to the weight of the wag-
“ guns, and last many years without rotting—The
“ large white-thorn, mapple, &c. make good faggots,
“ and the small of all kinds make good brush-wood, and
“ fire-wood for the common people, who have no coal
“ but from London.

“ It is not to be believed how thick hedge-row trees
“ are, and once planting does for ever. When they
“ cut their hedges, which they do sometimes, both
“ for profit and to secure their ditches, they prune up
“ all the young trees. The elm here, you know, comes
“ from suckers; the ash, oak, &c. from seed, which
“ drops into, and is sheltered by the hedge, and gets
“ up through it, that one may see the finest young
“ trees pruned up a man's height above what is on
“ the dike, when a hedge hath been lately cut; and
“ these trees stand from three to five foot distance
“ all along the dike. The elms, and sometimes the
“ ashes, that are well grown trees, but not what is
“ called timber, they generally prune very high for
“ the sake of the burn-wood that is got off, and to
“ give air to the rest that are lower, of all sizes. They
“ seldom prune up the oak so high; because their
“ branches pay well in bark and otherways, when
“ old. In short, in the inclosed parts of this country,
“ it is common to have some hundred pounds worth
“ of timber upon an hundred pound estate, as they
“ either cut all the timber round an inclosure at once,
“ or pick them out every year; for there is a succe-
“ sion rises, that every year the timber yields as much
“ as the land.

“ They have several advantages in the thickness of
“ their hedge-row trees; it makes the fence much
“ the

“ the stronger, especially when new cut; for then it
 “ strengthens the dry hedge, and a stag will hardly
 “ venture to brush through trees within three or four
 “ foot of one another: By this I see the mistake of
 “ thinking that the putting so many plants in a bank,
 “ between two ditches, hinders their growth; being
 “ thus covered from the sun, they keep in the moi-
 “ sture, and it is plain, where the bank is thickest, e-
 “ very thing grows best.

Of the crab apples they make verjuice, and the
 “ farmers sometimes mix them with their apples
 “ for cyder; for there is scarce one without a little
 “ orchard.

“ The elder berries are of great use: The mapple
 “ grows fast under the drop of other trees, is a strong
 “ hedge, makes good stakes or burn-wood, and the
 “ bramble mixed with it, grows high on it, and on
 “ the hazel and filberd, both which, when cut down,
 “ run up presently, and are thickened by the other
 “ things I have before named. The young trees are
 “ left, when the hedges are cut, from four to ten
 “ foot high above the stumps of the hedge, and, in
 “ about thirty or forty years, the elms are fit for
 “ many uses, particularly for water-pipes: The use of
 “ the ash at the same age is known every where:
 “ The oak requires double the time, but answers well
 “ when timber. I managed my hedges in the same
 “ manner, and had as much billeting from pruning
 “ the hedge-rows, and the pollards, as served my
 “ house in fire. I kept a rotation, by which I had,
 “ and ever might have had, enough in the few fields
 “ I reserved for my own use: In seven years such a
 “ hedge may be again cut, but for deer they are
 “ longer.

“ I have observed very narrowly some fields, where
 “ they cut every year timber to a greater value than
 “ what the fields yield them; nay, double. I have
 “ computed

“ computed upon the hedges round a small field, of
 “ four or five acres, let for as many pounds, near a
 “ hundred pounds worth of timber, and a succession
 “ of different sizes, that, with care, may yield as
 “ much more every thirty years; so that really a man
 “ gets thirty years purchase every thirty years, for
 “ the timber growing upon his lands, and the yearly
 “ rent of his ground to the bargain, without any ex-
 “ pence. Some weed them five or ten pounds worth,
 “ as they have use for money: Some a whole side of
 “ an inclosure, or two sides at once: Others cut all
 “ the timber-trees in one year.” And now having
 given an account of the different kinds of fences I
 have made or heard recommended, I shall next say
 something

OF GRASS-SEEDS,

A very great improvement: for the ground, immedi-
 ately after corn, is many years before it swards, and
 many more before it can produce hay, or tolerable
 pasture. This improvement was new in this country,
 till I got the people from Dorsetshire: I fell heartily
 to work, tho’ the whole country, who are really dis-
 contented at any new thing, were angry with me.
 They had a poor opinion of a man’s understanding,
 who would sow grass upon land that would carry corn.
 But if I should sow it upon meer out-ground, or
 what was poor, they would not blame me; but in
 that lay their mistake; for in such land, the crop of
 grass is good for nothing; whereas in rich and well
 manured ground, the grass is good, and soon fitted
 for corn.

The broad-clover with the red flower hath
Broad been long in esteem; it is sown in good
clover. ground after barley, and harrowed with it:
 the finer the ground is made for this and all
 other

other grafs-seeds, the better. Twenty pounds of clover is enough for a Scots acre, which is about a fifth larger than in England. I have seen this clover thrive so well, that, after the barley was cut and carried off, the clover was mowed and given green to cattle: the next year, if it was seasonable, it was cut in the end of May, or beginning of June for hay. I shall say nothing of the making of hay, every day-labourer knowing it. After the crop is carried off, no beast should be allowed to touch the field, and the clover will rise much thicker than it did before: When this is in the flower, it may be cut again for hay, and, by sparing it a week or two, will yield good pasturage till wet weather, and then cattle should be taken off, lest they potch the ground. Indeed I most commonly keep the second crop for seed, which will be ripe in about a month after it is in the flower: the hay of this crop is of no great value, yet black cattle will eat it. After the grafs is threshed, the seed is got clean out of the husk, and made ready for sowing, by putting it a certain way through the mill. Clover, if sown in proper good ground, may yield a crop of hay, another for seed, and good pasture in a year, for two or three years; after that it yields one good crop and pasture. But be-

Clover and Rye-grafs. cause clover soon runs out of the ground, some sow twelve pounds of clover and three bushels of rye-grafs in an acre. This way the seed of neither can be had, because the one is much sooner ripe than the other, and but one crop of hay in a year; but this crop is so good as to make sufficient compensation, and holds for many years; especially, if, instead of hay, it is sometimes pastured upon: Nor will this endanger the horse, as they say the clover doth.

Rye-grafs alone. When rye-grafs is sown without mixture along with the barley, four bushels ought

ought to be sown in a Scots acre. If the ground is in good heart as it ought to be, it will prosper exceedingly, and the trefoil, or hop-clover, with a yellow flower, will come up very thick amongst it. I have often tried to sow this seed by itself, but in vain, although it comes with the rye-grass.

There is a small clover with a white flower, that is much in request, and is reckoned the sweetest feeding of any. It may be cut when green, and cattle are very fond of it; but I doubt it will scarcely cut for hay without it is mixed with rye-grass or red-clover. I am told that it is the best pasture of any, and that it is much in use, and praised at present.

*Small
white
clover.*

I have tried St. foin with very ill success, and the lucern with worse, but perhaps it was the fault of the directions I got. The rye-grass and clover I have great experience of, and therefore dare recommend them, and they who at first laughed at me are now following my example. Some indeed cry out against grass-seeds, and the rye-grass in particular; how justly you may judge; for they sowed it in their worst lands, and took it ill that their crops were not as good as mine, who used it kindly. They say there is no plowing out the roots of the rye-grass, and of course they can have no corn: I own in so bad land they can have nothing; but my corn where my rye-grass was, was very good: but, if they will fallow and dress their ground, and not take too many crops of corn, and lay it down in good heart with rye-grass, I shall answer they will give over railing at it, or at me for recommending it. The seasons for sowing these seeds are the same with that of barley; but I have sown the broad clover in the beginning of March without any corn, and it was thrice cut in the flower and eat by horses

*St. foin,
and lu-
cern.*

*Seasons for
sowing.*

horses in the house that same year; they may likewise be sown alone in August or beginning of September.

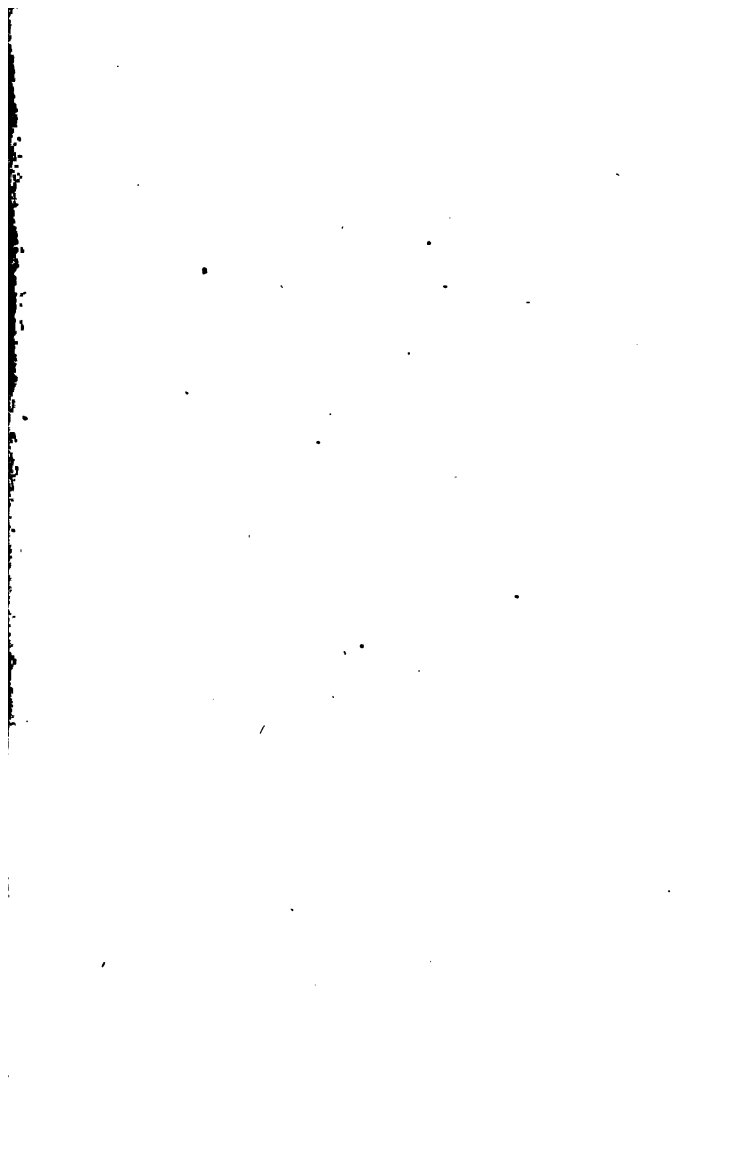
I shall now end this long paper, and, if it can be of any use to my friends, I shall not grudge the trouble of it.

HADDINGTON.

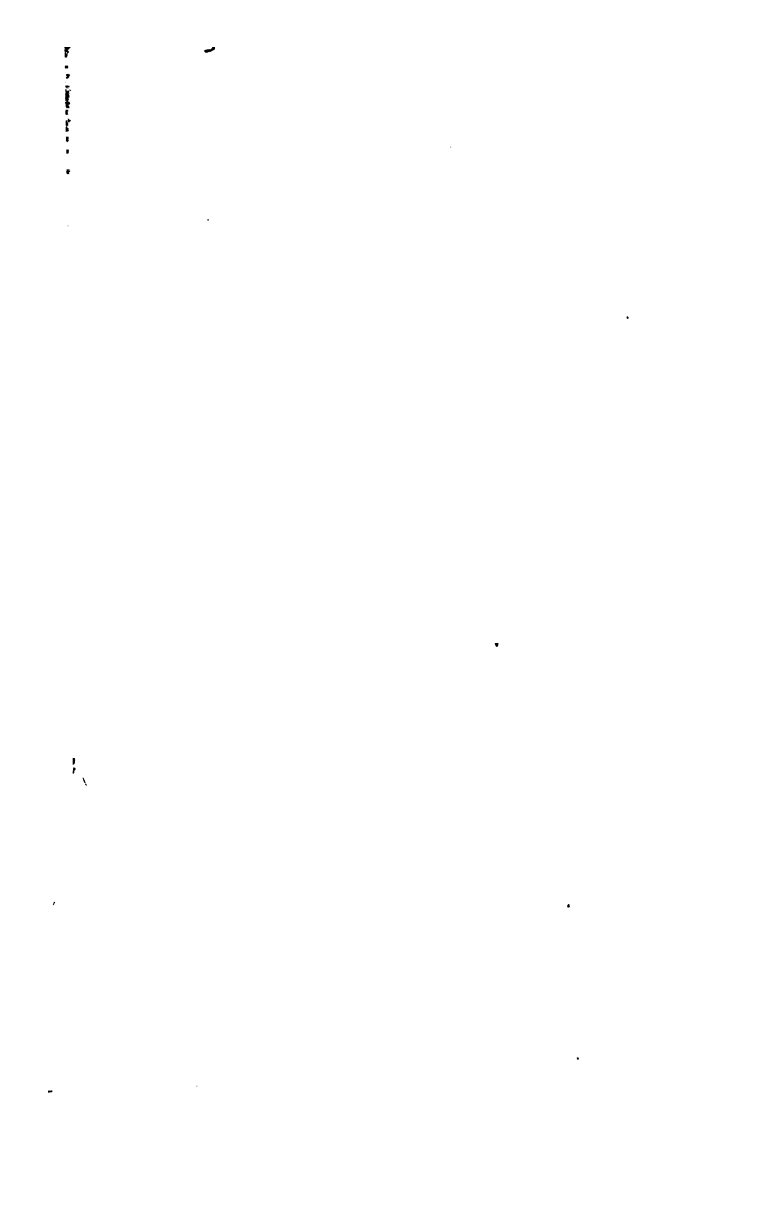
P. S. In the preceeding treatise, I made very free with some late authors who have written upon forest-trees; but since I wrote these papers, I have seen Philip Millar's dictionary, and Mr. Ellis of Goodfeden's book, called the Hereford-shire farmer; and, as I confess, they write like men who understood what they wrote about trees (except first, of which they seem to have had no experience) I thought it necessary to do them justice. When I wrote about the BIRCH, I promised to direct how to manage it, how soon I was informed myself. One of my servants pretends to know the way of raising it by the seed: his way is to gather it about the 20th of September, when it is full ripe; he then keeps it in a dry cool place till the month of February. The way of sowing, is to dig a piece of ground, somewhat moist, and when it is well raked and fallen, sow it over the ground pretty thick, then chop it down with the back of the spade; for it will not bear covering: he then lays on furze-bushes over it to keep the birds from devouring the seed; when they have lain till it peeps, take the furze away, and you will soon see the young plants appear. In this seed-bed let them stand two years, and then put them into the nursery, or set them out for good.

I must likewise add, that, tho' what I have said about the alder, and the ill success I have had with them, be true; yet I have since seen many good and thriving plants of that kind; and a gentleman, whose opinion I rely upon, has blamed me very much for what I said in prejudice of them; and assures me they are of great use. I own it is a fine tree, and, when rightly managed (which mine were not) may come to answer very well. This I thought fit to be added, lest I should be blamed for speaking slightly of a tree that may be of value: and I am not ashamed to be convinced of an error, nor to amend it.

F I N I S.









3 2044 102 812

HOLZER
MADER S